

- 1 10. The vaccine strain according to claim 8 wherein the animal is a fish.
- 1 11. The vaccine strain according to claim 8 wherein the animal is a bivalve.
- 1 12. The vaccine strain according to claim 8 wherein the animal is a crustacean.
- 1 13. The vaccine strain according to claim 8 wherein the mutation is non-revertible.
- 1 14. The vaccine strain according to claim 13 wherein the mutation is an insertion.
- 1 15. The vaccine strain according to claim 13 wherein the mutation is a deletion.
- 1 16. A method for immunizing an animal against *V. anguillarum* infection in an animal which
2 comprises:
3 administering to the animal a vaccine comprised of a live, attenuated strain of
4 *V. anguillarum*, the strain comprised of a mutated *mugA* gene, the strain characterized in that it is
5 incapable of expressing a functional *mugA* protein as a result of the mutation in the *mugA* gene.
- 1 17. The method according to claim 16 wherein administering comprises immersion.
- 1 18. The method according to claim 16 wherein administering comprises intraperitoneal
2 injection.
- 1 19. The method according to claim 16 wherein administering comprises oral intubation.
- 2 20. The method according to claim 16 wherein administering comprises anal intubation.

5 selectively hybridizes with DNA of *V. anguillarum* , the DNA probe comprising a nucleotide
6 sequence selected from the group consisting of SEQ ID NO. 1, whereby the presence of the
7 DNA is indicative of a *V. anguillarum* infection.